

NOT FOR PUBLICATION

**UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW JERSEY**

IN RE: TR LABS PATENT LITIGATION

MDL No. 2396

Lead Case:
Civil Action No. 09-3883-PGS-DEA

MEMORANDUM & ORDER

SHERIDAN, U.S.D.J.

This matter comes before the Court by way of defendants AT&T Corp., Verizon Services Corp., and Verizon Communications, Inc.’s (collectively, “Defendants”) Renewed Motion for Summary Judgment of Invalidity Based on Indefiniteness of U.S. Patent No. 7,260,059 (“the ’059 Patent”). (Dkt. No. 285). Defendants first moved for summary judgment of the ’059 Patent in 2011 in two related cases: *Alberta Telecommunications Research Center v. AT&T Corp.*, No. 3:09-cv-03883-PGS-DEA (“Case No. 09-3883”) and *Alberta Telecommunications Research Center v. Verizon Communications, Inc.*, 3:10-cv-01132-PGS-DEA (“Case No. 10-1132”). See Dkt No. 69 (AT&T’s motion, dated June 21, 2011); see also Case No. 10-1132, Dkt. No. 61 (Verizon’s motion, dated September 30, 2011, in which Verizon explicitly joined AT&T’s motion). The Court denied those motions on September 10, 2012, reasoning that the ’059 Patent—and specifically, the term “increases and optimizes demand served” that appears in claim 1 of the ’059 Patent—teaches a method of optimization. Dkt. No. 121, at 10 (finding that the term “‘increases and optimizes demand served’ is not indefinite when considered in the greater context of the specification and the claims”). Thereafter, Case No. 09-3883 and Case No. 10-1132 were consolidated with several related cases into a multi-district litigation, and a second *Markman*

hearing was held. *See* Dkt. Nos. 133 (consolidating cases), 166 (setting the schedule for the second *Markman* hearing), 261 (minute entry for *Markman* hearing). At that second *Markman* hearing, the claim “increases and optimizes demand served” was for the first time disputed, and the Court was then tasked with actually defining the phrase. And that task proved quite difficult. On December 23, 2013, the Court sent the parties an informal draft of its proposed Claim Construction Memorandum; that memorandum included a construction for “increases and optimizes demand served” that was introduced with a brief notation:

In adopting the following construction, the Court was confronted by certain issues that first arose in the context of the earlier motion for summary judgment. The issue resolved there, regarding the definiteness of this claim term, was, and remains, a close one. If any party would care to revisit that issue or address any other issues related to the validity '059 Patent, the Court will permit additional briefing.

Dkt No. 279-1, at 21 n. 3. Relying on that notation, Defendants moved for permission to renew their motion, and the Court granted it. *See* Dkt. No. 284. For the reasons set forth below, the Court now grants Defendants’ motion for Summary Judgment of Invalidity.

I. Facts

The following recitation of facts assumes a basic familiarity with the subject technology.

The '059 Patent—titled “Evolution of a Telecommunications Network from Ring to Mesh Structure”—teaches a method for converting a ring network to a mesh network. '059 Patent, col. 1, ll. 51–65. When the '059 Patent was granted, (1) ring networks were still common, (2) the advantages of mesh networks over ring networks were well known, and (3) a method for converting ring networks to mesh networks had already been identified and patented. *See* '059 Patent, col. 1, ll. 14–15, 37–47. That existing method of converting ring networks to mesh networks is set forth in U.S. Patent No. 6,370,110, issued Apr. 9, 2002 (herein, the “Existing Method”). According to the '059 Patent, the Existing Method involves interlacing a ring network

with a mesh network so that each network may profit from the other's protection capacity. '059 Patent, col. 1, ll. 39–47. The '059 Patent attempts to improve upon the Existing Method by teaching a method whereby the act of converting the ring network to a mesh network increases the amount of demand served. '059 Patent, col. 1, l. 44 to col. 2 l. 59.

Claim 1 of the '059 Patent—which is both the only independent claim of the patent and the only claim that is now at issue—recites the following:

A method of providing protection for a telecommunications network against failure of a span or node in the telecommunications network, in which the telecommunications network initially has protection organized in rings of connected protection links, the method comprising the steps of:

selecting ring nodes for conversion from ring node to mesh node according to a strategy that increases and optimizes demand served by the telecommunications network, wherein the strategy takes into account the cost of conversion of the selected nodes from ring node to mesh node;

breaking connections between protection links at the selected ring nodes; and

connecting the protection links into a mesh network of links of spare capacity, thereby converting each of the selected ring nodes from a ring node into a mesh node.

'059 Patent, col. 11, l. 58 to col. 12, l. 11 (emphasis added). Defendants argue that the term “increases and optimizes demand served” is indefinite; Plaintiff Alberta Telecommunications Research Centre d/b/a TR Labs (“TR Labs”) disagrees.

Defendants' argument is twofold. Defendants first argue that the Patent does not set forth any criteria by which to determine when demand served has been *optimized*. Supp. Br. at 4–7. As both parties have acknowledged earlier in this litigation, “[o]ptimization is the process of finding the best possible solution to a problem given certain constraints that must be satisfied.” Defendants' Joint Technology Tutorial, module 4; *see also Markman* Hearing T. 7, ll. 5–8 (Oct. 2, 2013) (wherein Plaintiff admitted that the Defendants' Joint Technology Tutorial “spell[s] out

accurately and objectively what's going on with this technology"); Merriam Webster's Collegiate Dictionary 816 (10th ed. 1993). Defendants assert that the '059 Patent "does not identify the 'constraints.'" Supp. Br. at 4 (arguing that "optimization itself can be defined differently with respect to different criteria (time, efficiency, capacity, etc.)."). Defendants then argue that the phrase "demand served" is also incapable of construction, as "demand served" has no commonly understood meaning in the art and the Patent fails to provide a definition for the term. Supp. Br. at 8–9.

In response, TR Labs argues that "the specification is very clear regarding the type of constraint to be satisfied to achieve optimization." Opp'n Br. at 2–4. In support of this argument, TR Labs cites the following passages from the '059 Patent:

- In order to further increase demand served by the telecommunications network, nodes may be selected for conversion from ring node to mesh node according to an optimization strategy, which may take into account *the cost of conversion* of the node from a ring node to a mesh node [’059 Patent, col. 2, ll. 4–8];
- By this method, ongoing growth in transport demand is served while *deferring or eliminating expenditure for additional capacity* by reclaiming the protection capacity and inefficiently used working capacity in existing rings [*id.*, col. 2, ll. 18–21];
- A detailed planning model is given for *minimum cost evolution* out to a given total growth multiplier that considers factors such as the costs of new mesh capacity additions, nodal costs for mesh access to existing ring capacity and selective ADM conversions and re-use decisions. Increased demand, potentially a doubling or even tripling of demand, may be supported with *little or no additional capacity investment* through the period of ring-to-mesh conversion by ring-mining [*id.*, col. 2, ll. 29–37];
- Additional growth may be accommodated by relatively *small new capacity additions* to selected spans on existing rings. In addition, cost savings may be obtained by re-using network elements, and by selective conversion of network elements [*id.*, col. 4, ll. 5–9];
- The formulation *minimizes the total capacity investment* needed to meet a demand that is λ times the original demand served by the ring design [*id.*, col. 6, ll. 23–25];
- The ring mining framework may be analyzed with a complete optimization model for transitional growth to get from an existing ring set and demand matrix to a future demand growth multiplier or λ at *minimum total cost* [*id.*, col. 6, ll. 32–35];

- Such an analysis can also be used to specify at which nodes to break into the rings, where to add new capacity, which ADMs to reuse, and which segments of ring capacity to actually abandon to ***avoid conversion costs*** if the overlying mesh can more efficiently carry the relevant demands [*id.*, col. 6, ll. 39–44];
- It is at these sites that accessed ring capacity is being cross-connected for mesh routing and restoration efficiencies. Re-used ADMs are those that play ***a cost-effective role*** in a chain of the resulting logical mesh [*id.*, col. 6, ll. 56–60];
- The transition from ring to mesh networking can thus represent a financial opportunity for the deferment and ***reduction of ongoing investment*** in transport capacity for significant periods of time as represented by sustainable growth factors of 40% to as much as 290% [*id.*, col. 6, ll. 61–65];
- This type of conversion operation can be achieved with ***maximal re-use of the existing ADMs*** by addition of the straddling span interface (SSIU) at the ring ADMs at locations B and C in FIG. 1 [*id.*, col. 7, ll. 49–52];
- One approach is to use a complete optimization model for transitional growth to get from an existing ring set and demand matrix to a future demand growth multiplier of λ at ***minimum total cost*** [*id.*, col. 9, ll. 21–24]; and
- The first term in the objective function represents the ***cost for adding new capacity modules***. The second term represents the ***cost of converting or re-using ADMs*** [*id.*, col. 10, ll. 46–48].

Opp’n Br. at 2–4 (emphasis in the opposition brief). TR Labs also argue that the term “Demand Served” is sufficiently definite. *Id.* at 6–7.

II. Indefiniteness Standard

Every patent’s specification must “conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.” 35 U.S.C. § 112 ¶ 2.¹ In the recent U.S. Supreme Court case of *Nautilus, Inc. v. Biosig Instruments, Inc.*, No. 13-369, 2014 WL 2440536 (U.S. June 2, 2014), the Court held that such claims must, when “viewed in light of the specification and prosecution history, inform those skilled in the art

¹ Paragraph 2 of 35 U.S.C. § 112 was replaced with newly designated § 112(b) when §4(c) of the Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, took effect on September 16, 2012. Nevertheless, the pre-AIA version of § 112 applies because the ’059 Patent was issued prior to that date. *See, e.g., Nautilus, Inc. v. Biosig Instruments, Inc.*, No. 13-369, 2014 WL 2440536, at n.1 (U.S. June 2, 2014).

about the scope of the invention with reasonable certainty.” *Id.* at *7 (rejecting prior Federal Circuit precedent that formulated the indefiniteness standard as an inquiry into whether such claims were “not amenable to construction or insolubly ambiguous”).² In so holding, the Court stated that “[i]t cannot be sufficient that a court can ascribe *some* meaning to a patent’s claims; the definiteness inquiry trains on the understanding of a skilled artisan at the time of the patent application, not that of a court viewing matters *post hoc*.” *Id.* at *18; *see also Nautilus, Inc. v. Biosig Instruments, Inc.*, 715 F.3d 891, 898 (Fed Cir. 2013), *vacated on other grounds* 13-369, 2014 WL 2440546 (U.S. June 2, 2014) (“[I]f reasonable efforts at claim construction result in a definition that does not provide sufficient particularity and clarity to inform skilled artisans of the bounds of the claim, the claim is insolubly ambiguous and invalid for indefiniteness”). While this standard takes into account “the inherent limitations of language,” it requires every “patent . . . [to] be precise enough to afford clear notice of what is claimed, thereby “apprising the public of what is still open to them.”” *Nautilus*, 2014 WL 2440536, at *7 (quoting *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 373 (1996)).

Importantly, this new standard does not disrupt three key aspects of the § 112, ¶ 2 inquiry: “First, definiteness is to be evaluated from the perspective of someone skilled in the relevant art.” *Nautilus*, 2014 WL 2440536, at *6 (citing *General Elec. Co v. Wabash Appliance Corp.*, 304 U.S. 364, 371 (1938)). “Second, in assessing definiteness, claims are to be read in light of the patent’s specification and prosecution history.” *Nautilus*, 2014 WL 2440536, at *6 (citing *United States v. Adams*, 383 U.S. 39, 48–49 (1966); *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535

² In their motion for summary judgment, Defendants argued that the subject claim language is indefinite under both the *Nautilus* standard and pre-*Nautilus* standard. *See* Supp. Br. at 2–3 n.3. Plaintiff did not address this issue. *See generally* Opp’n Br.

U.S. 722, 741 (2002)). “Third, definiteness is measured from the viewpoint of a person skilled in the art *at the time the patent was filed*.” *Nautilus*, 2014 WL 2440536, at *6.

III. Analysis

In their Opposition Brief, TR Labs argues that “the specification is very clear regarding the type of constraint to be satisfied to achieve optimization.” Opp’n Br. at 2–4. The Court disagrees. The specification identifies a host of possible constraints without “particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.” 35 U.S.C. § 112 ¶ 2.

The twelve specification excerpts that TR Labs cites in its Opposition Brief illustrate this problem. The first excerpt refers to “an optimization strategy” without identifying what, exactly, is entailed in the strategy. *See* ’059 Patent, col. 2, ll. 4–8. The only explanation provided in the surrounding language is that it “may take into account the cost of conversion of the node from a ring node to a mesh node.” *Id.* The specification—and indeed the remainder of the Patent—does not distinctly point out the *costs* that are to be considered, nor does it take into account how such costs are to be weighed and balanced in a way that optimizes demand served. Furthermore, the use of the word “may” in this passage suggests that the optimization strategy does not even require a practitioner to “take into account the cost of conversion.” Under such a reading, any consideration of conversion costs would represent only one embodiment of the claim. If allowed, such a patent would cover the very concept of optimization.

The second excerpt refers to the results and the alleged strategy—serving ongoing growth in transport demand and deferring or eliminating expenditures—without identifying how the results are obtained beyond “reclaiming the protection capacity and inefficiently used working capacity in existing rings.” *Id.*, col. 2, ll. 18–21. However, the benefits of reclaiming protection

capacity by reworking existing rings were already known in the art. *See id.*, col. 1, ll. 14–15, 37–47. The alleged purpose of the Patent is to improve on the existing method by identifying a better method. *Id.*, col. 1, l. 44 to col. 2 l. 59. The quoted language fails to identify that method.

The third excerpt refers to a “detailed planning model” and identifies certain factors, including “the costs of new mesh capacity additions” and the “nodal costs for mesh access to existing ring capacity.” *Id.*, col. 2, ll. 29–37. The excerpt does not state where the “detailed planning model” is set forth, and a review of the Patent as a whole does not reveal such a planning model. Furthermore, the considerations that are factored into a determination of the identified costs—e.g., time, money, opportunity—are not identified, nor does the specification identify how such costs should be weighted and balanced.

The fourth excerpt only sets forth the expected benefits of the strategy (i.e., additional growth and costs savings). *Id.*, col. 4, ll. 5–9.

The fifth excerpt explicitly refers to a “formulation.” *Id.*, col. 6, ll. 23–25. That formulation is an “IP formulation, with the constraint that the available capacity on each span is now the sum of the capacity reclaimed from the ring design and the added mesh capacity.” *Id.*, col. 6, ll. 20–23. And that formulation is also part of a refined strategy—referred to as the “second” refined strategy—in which “selective additions of new capacity on spans . . . of the network may also significantly increase λ^3 during the ring mining process.” *Id.*, col. 6, ll. 12–15. The exact terms of the IP formulation are uncertain, as are the terms of the second refined strategy. *Id.*, col. 6, ll. 23–25. Furthermore, the Patent does not explain how the second refined strategy factors into the overall method that the Patent purports to teach: Is the second refined strategy *part of* the overall method? Is it an *alternative to* the overall method? The answers to these questions are uncertain.

³ In the '059 Patent, λ represents “a future demand growth multiplier.” *See* '059 Patent, col. 6, ll. 34–35; *see also id.*, col. 5, ll. 40–42 (using λ to represent an unknown value used to help represent the growth in demand served).

The sixth excerpt refers to a “complete optimization model for transitional growth” without defining the model. *Id.*, col. 6, ll. 32–35. Rather, the excerpt identifies the goal of the optimization model—i.e., the “future demand growth multiplier”—and claims that the model identifies the “minimum total cost” for any future demand growth multiplier. *Id.*

The seventh excerpt refers to the benefits of the preferred method without identifying the method’s terms. *Id.*, col. 6, ll. 39–44. The excerpt merely states that the analysis “can also be used to specify at which nodes to break the rings, where to add new capacity, which ADMs to reuse, and which segments of ring capacity to abandon” without explaining how the analysis identifies such locations within the network. *Id.*

The eighth excerpt provides a general overview of the process—i.e., certain nodes are identified as the optimal nodes and are converted into a mesh network—without identifying exactly *how* the nodes are so identified. *Id.*, col. 6, ll. 56–60.

The ninth excerpt refers to the benefits of the preferred method without identifying the method’s terms. *Id.*, col. 6, ll. 61–65.

The tenth method discusses the benefits of adding of straddling spans without identifying the method by which the locations of such spans are identified. *Id.*, col. 7, ll. 49–52. Neither this excerpt nor the previously-identified excerpts inform those skilled in the art about the scope of the actual invention as it pertains to optimization. *Cf. Nautilus, Inc. v. Biosig Instruments, Inc.*, No. 13-369, 2014 WL 2440536, at *7 (U.S. June 2, 2014).

The eleventh and twelfth excerpts bear specific mentioning. These excerpts bookend and explicitly incorporate a set of parameters and constraints that the ’059 Patent refers to as the objective function (the “Objective Function”) *Id.*, col. 9, *l.* 15 to col. 10, *l.* 48. If the Objective Function were the method for optimizing demand served that the Patent claims, it could “inform

those skilled in the art about the scope of the invention with reasonable certainty.” *Cf. Nautilus, Inc.*, 2014 WL 2440536, at *7. However, it appears that the Objective Function is merely part of the claimed optimization strategy: the Patent refers to the Objective Function as “[o]ne approach” (*see id.*, col. 9, 21–24), suggesting that it is one of several approaches claimed in the ’059 Patent; the Patent refers to “salvage benefits,” a concept that the Patent makes clear is excluded from the Objective Function (*see id.*, col. 9, 19 (“Abandoned segments of ring capacity may give rise to salvage benefits, but this is not taken into account in the model described here.”)); and the Patent asserts that additional modifications that are outside of the Objective Function are covered by the Patent (*see id.*, col. 11, ll. 54–56 (“A person skilled in the art could make immaterial modifications to the invention described in this patent document without departing from the essence of the claimed invention.”)).⁴

For the reasons stated above, the Court finds that the Claim does not set forth specific criteria by which to *optimize* demand served. Therefore, the Court determines that the term “increases and optimizes demand served” is indefinite. Since the term “increases and optimizes demand served” appears in the first claim of the ’059 Patent, and since the first claim of the ’059 Patent is the only independent claim of such patent, the Court determines that the ’059 Patent is invalid based on indefiniteness.

⁴ It bears mentioning that TR Labs has explicitly argued at length that the Objective Function is a mere embodiment of the claimed method and *not* the claimed method itself. *See* Docket Entry No. 280-1, at 2–5.

ORDER

IT IS on this 14th day of July, 2014:

ORDERED that defendants AT&T Corp., Verizon Services Corp., and Verizon Communications, Inc.'s Renewed Motion for Summary Judgment of Invalidity Based on Indefiniteness of U.S. Patent No. 7,260,059 is hereby granted.

s/Peter G. Sheridan

PETER G. SHERIDAN, U.S.D.J.